

CLAIMS

What is Claimed is:

- 5 1. Waterborne cathodic electrodeposition (CED) coating compositions comprising resin solids and optionally pigments, fillers and conventional coating additives, wherein said CED coating compositions comprise at least one bismuth compound in a quantity of 0.1 to 2.5 wt.%, calculated as bismuth and relative to resin solids content, together with at least one
10 dicarboxylic acid selected from the group consisting of acyclic dicarboxylic acids with 3 to 7 carbon atoms and dicarboxylic acids with 8 to 10 carbon atoms comprising a cyclic structural unit in a quantity of 3 to 15 equivalent-%, relative to the acid equivalents present in the CED coating composition.
- 15 2. The CED coating compositions of claim 1, wherein the proportion of the at least one bismuth compound is 0.5 to 2 wt.%, calculated as bismuth and relative to resin solids content.
- 20 3. The CED coating compositions of claim 1, wherein the at least one bismuth compound is selected from the group consisting of bismuth chelate complexes, bismuth oxide, bismuth hydroxide and bismuth salts.
- 25 4. The CED coating compositions of claim 1, wherein the at least one bismuth compound is selected from the group consisting of bismuth lactate, bismuth dimethylolpropionate, bismuth amidosulfonate and bismuth hydrocarbylsulfonates.
- 30 5. The CED coating compositions of claim 1, wherein the CED coating composition contains 20 to 70 milliequivalents of acid per 100 g of resin solids content.

6. The CED coating compositions of claim 1, wherein the resin solids content comprises a system which self-crosslinks or externally crosslinks by reaction of groups comprising active hydrogen with blocked isocyanate groups.

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7. A process comprising cathodic electrodepositing a coating of the CED coating composition according to claim 1 on an electrically conductive substrate.

10 8. A process according to claim 7, wherein the substrate comprises a substrate selected from the group consisting of automotive bodies and body parts.

9. A substrate coated using the cathodic electrodeposition process of
15 claim 7.

10. An automotive body or part coated using the cathodic electrodeposition process of claim 8.